

**ABSTRACT**

A system for simultaneous bi-directional transmission of signals over transmission lines between devices having interface ports includes a first circuit for generating the output signal and a second circuit having first and second terminals. The first terminal is coupled to the first circuit and the second terminal is coupled to the interface port. A signal level at the first terminal corresponds to a first combination of the input and output signals, and a signal level at the second terminal corresponds to a second combination of the input and output signals. A third circuit is coupled to the first and second terminals of the second circuit for determining the input signal based on the first and second combinations of the input and output signal levels.

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